

IEEE Surge Protective Devices Main Committee Meeting Minutes  
Spring Meeting Clearwater Florida May 4, 2006

**1) Call to order**

Chairman Doug Dorr called to order, members introduced themselves. There were 22 members and 2 guests in attendance.

**2) Approval of agenda**

Agenda was displayed on the overhead projector and approved with several items added under new business as indicated with an \*.

**3) Approval of minutes of last meeting**

Chair Noted that Spring 2005 minutes were not officially approved at the Fall 2005 meeting and a motion was needed to approve those minutes. Since all relevant, high voltage, low voltage, and A&S minutes referenced in the main committee minutes from Spring 2004 were now posted on the on-line community website the motion was made to approve these prior minutes and motion passed.

Fall 2005 Meeting Minutes from Atlanta were discussed and approved.

Chair noted that in the future the main committee minutes (once approved and amended to include A&S, HV and LV subcommittee minutes will be posted on the the IEEE-SA Grouper site. The objective will be to keep an archive of the past 10 years of minutes posted on the site. Chair noted that the SPD secretary responsibility is to hold records for all meetings from past 10 years so this activity will be supported by that effort

The public (grouper) website <http://grouper.ieee.org/groups/spd> will hold approved minutes, the member (on-line community website) <https://www.ieeecommunities.org/spd> will hold both approved and most recent unapproved minutes. Paper copies will be limited at future meetings and it will be the responsibility of the SPDC members to download and print prior meeting minutes assuming they are available on the website prior to the meeting.

**4) Subcommittee reports**

**(3.1) Administrative & Standards – D. Dorr**

Doug Dorr reported that A&S met for 3 hours on Tuesday May 2<sup>nd</sup> and will need a similar time slot for the fall 2006 meeting. Draft minutes for A&S will be posted on the on-line community website under the 3.1 folder and once approved will be amended to these minutes as an attachment.

**Financial Report (General) – K. Brown**

The IEEE Balance is approximately \$7600. increased from a previous balance of \$4800.00

### **Standards Coordinators**

#### **LV – W. Goldbach**

Bill Goldbach reported on the status of Low Voltage PARs and Standards in process. Bill's full report can be found on the on-line community website. Highlights of the report include:

C62.35 PAR extension is in process

C62.34 Sent to Editor for final review and publication

C62.43 Application Guide is released for publications

C62.44 Application Guide secondary arrestors ,BRC formed, extension required end of the year

C62,48 Completed and released for publication

C62.72 PAR extension first rejected new par approved balloted and approved and BRC is in process.

All other reports are posted on the IEEE communities for reference.

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#### **HV – J. Wilson**

Jim Wilson reported on the status of Low Voltage PARs and Standards in process. Jim's full report can be found on the on-line community website. Highlights of the report include:

C62.11 Published

Two working group change requests were submitted

The next deadline base for submittal is August 4, 2006

### **(3.2) Bibliography – C. Lindquist**

Carl Lindquist reported that the Bibliography WG met for 3 hours and had 6 members in attendance. Carl reported on the WG activities related to the Papers archive, the symbols library and the SPD dictionary. Carl's full report can be found on the on-line community website.

Met for 3 hours, 6 member quorum. Francois has over 50 paper to contribute to the grouper site access to the bibliography. The documents are unrestricted so they will be posted on the open site.

Francois presented 14 items to help access the documents. The documents will be posted on an unofficial site for a test. The purpose is to obtain access to documents related to working group activity.

Still gathering bibliographies and abstracts so if you have any please submit them to Carl Symbols library, task force one is reviewing the tasks required.

The dictionary was reviewed and accepted and will be posted on the website.

Doug Dorr thanked both Carl and Francois for the work performed on behalf of the IEEE SPDC main committee.

### **(3.3,3.4,3.5) High Voltage Surge Protective Devices – S. Hensley**

Steve Hensley reported that the HV subcommittee and the various working groups all met prior to the main committee meeting. Steve summarized some of the major activities from each working group meeting. Draft minutes for HV main subcommittee meeting will be posted on the on-line community website under the HV folder and once approved will be amended to these minutes as an attachment.

Very good attendance for C62.11. The document was published and the working group is starting on the next cycle. Started with 4 task forces. Jon Woodworth is running a 5<sup>th</sup> task force laying out a guide to provide rationale for each test.

Eva's group, 3.4.8 had 16 attendees, good attendance reviewed sections of application guide. New item is review fast transient (nanosecond) rise time issues.

Dave Jackson requested a joint task force between high voltage and low voltage interested in Surge Protection and Insulation of Wind Farms

It is recommended that wind farm industry representative participate. The scope is to address overall surge protection considerations similar to surge protection of generating plants.

Many of the low voltage standards already developed are appropriate for this area.

We would like to prepare a technical paper (guide) that would be a useful guide to the industry. This topic will be added to new business per Doug Dorr

WG 3.4.14 Reigh Walling will be assisted with the recirculation draft preparation by Tom and Jodi and the document is in ballot resolution. The meeting is going through the BRC issues for most of the meeting.

Tom and Jodi will be taking over as co-chairs of the WG for the next revision.

### **(3.6) Low Voltage Surge Protective Devices – R. Hill**

Ray Hill reported that the LV subcommittee and the various working groups all met prior to the main committee meeting. Ray summarized some of the

major activities from each working group meeting. Draft minutes for LV main subcommittee meeting will be posted on the on-line community website under the LV folder and once approved will be amended to these minutes as an attachment.

WG3.6.1 did not meet and will not be meeting in the fall. 3.6.3 Mick Maytum reviewed comments received on C62.37.1 concerns relating to technical versus editorial comments referred to Jodi H.

C62.42 approved and in final edits. PAR for next revision in process

3.6.4 reviewed updates from Trilogy task force

3.6.6 C62.72 balloted BRC working comments

C62.62 started work on test specification

3.6.10 discussed a patent issue and a letter will be sent in response to a received letter.

A guest speaker will be speaking Hubert B. will be speaking at the fall SPDC meeting regarding the history of the 10x350 waveform. It will be scheduled so all SPDC members can attend.

. The room requirements will be larger and Steve Hensley was asked to pole the high voltage working groups to see if they want to attend. 3.6.6 will submit a list of desired topics to discuss.

### **(3.7) Web and Electronic documentation – M. Maytum**

Mick reported that Phase 1 of the grouper site rework is complete and Phase 2 getting started. .Grouper will be compliant with PES website recommendations Phase 3 will add a members private area.

The old grouper site has been archived.

Mick will submit his report which will be attached to these main committee meeting minutes and post it to the IEEE PES Forum.

Mick proposed moving the online community to an area exclusive to just SPD instead of having to navigated the Power and Energy layout. No vote was necessary following the discussion. Mick was requested to pursue the action and to report at the next A&S teleconference. Mick was also tasked with providing enough details that in the event of his inability to continue for any reason, SPDC would not

be left hanging. Mick has already supplied preliminary materials to address this second item.

#### IEC TC 37

Mike Comber will provide a detailed report to be attached to these minutes and added to the ieee communities site.

#### IEC TC 37A

Joe Koepfinger sent a written report which will be included on the ieee communities site.

#### IEC TC 37/SC 37B

SC 37B has not met. The group is in a maintenance mode. The group will meet in June in Golden Colorado.

#### IEC TC 81

Mick Maytum reported that the draft of IEC 62305-5 on Services protection has been badly received. IEC documents 81/274/INF and 81/274/INF indicate the standard will be delayed until 2008. In the mean time ITU-T Study group 5 will be developing their own recommendation on services protection. Francois said we are not aware (US National Committee) did not know it was being withdrawn but this just happened last week.

TC81 Part 5 is under consideration to be withdrawn. Tony Surtees is a member of TC81 Part 4. Francois said we are not aware (US National Committee) did not know it was being withdrawn but this just happened last week. Tony Surtees is a member of TC81 Part 4.

#### PES TC Activities – D. Dorr for F. Waterer

Four papers will be presented at the PES National Conference on Tuesday June 19, 2006 in Montreal. Presenters will be Doug Dorr, Ken Brown and Dalibor Klabor.

C62 is being reconstituted to adopt certain IEC standards as US National Standards.

### **6) Old business**

Jodi provided an overview of the PAR process during this Spring Meeting

### **7) New business**

Ray Hill is asking if we want to Liaison with the HV Test Technique committee. The transformer insulation coordination was done using an electromagnetic model. The switching capacitance is tremendous. The SPDC will officially make Ray Hill the Liaison D to this activity.

### **8) Review of action item list**

- a. Francois Martzloff will provide Steve Hensley an overview of the discussions planned with Hubert.
- b. Steve Hensley will send the 10x350us overview to his WG Chairs and request if there is an interest in attendance.
- c. At the next A&S teleconference Ken Brown will extend the main committee and subcommittee meetings.
- d. The main committee chair (Doug Dorr) will send a letter acknowledging the work of Tom Hartman for his work in setting up the original grouper site.
- e. Matt Ceglia (IEEE) will provide guidelines to obtain the original graphics for a test of the procedure to handle graphics that Mick is developing.
- f. The A&S committee will Teleconference in June to review and discuss A&S issues and action items.
- g. Ron Hothkiss will email Dave Jackson to determine if a joint task force should work on an IEEE-PES Technical Paper that will serve as an industry guide. The most likely participation from LV working groups should come from 3.6.6 and 3.6.10 .
- h. There is a technical counsel approved by PES. SCC 21 Distributor Resources should be notified. Ray Hill and Tony Surtees to identify one of the published standards.
- i. The SPDC will establish a liaison D with TC 81/WG 10 on IEC 62305-5 Lightning protection of services.

## 9) SPDC Future Meeting Locations and Schedule

The next meeting (Fall Meeting 2006) will be held at the CNN Center in Atlanta Georgia from October 2-6, 2006

## 10) Adjournment

### Attachments

1. LV subcommittee minutes
2. HV subcommittee mtg minutes
3. A&S mtg minutes
4. Liaison rep attachments

#### **Liaison rep attachment A.**

**Document 81/274/INF, REPORT OF CONVENOR OF IEC TC 81/WG 10 (2006-04-21) reports:**

- IEC62305\_5 is meant to address "Services ". Right now it only addresses the telecom service and by using the very well advanced work in ITU-T. The draft CD2 was prepared by only ITU-T/SG5 members who have the feeling that the work is overlapping with ITU-T.
- There is a stated intent that other services will be studied in the future, but the reality is that this is unlikely to happen; as evidenced by the lack of interest in participation by the power and “piping” industries of any of the participating national committees.
- There is a good deal of variation in the configuration of power systems in participating countries and most

of these industries are “self-regulating,” it is unlikely any significant benefit will be gained from the effort. The

Convenor presented the following proposal:

- Stop the work of WG10 and look in which way Part 5 can be published by making reference to ITU-T work

(The situation lead to the impossibility to produce a CDV and to the necessity to endorse the ITU-T work. In

this scenario, Part 5 can be constituted by only one page).

- Encourage the collaboration between ITU-T and IEC (The scope of each standardization body is clear and duplication of work should be avoided).

### 3.3 Decision

No objection was raised against the proposal made by the Convenor.

The following decision was taken unanimously by the participants to WG10:

- Convenor will report to TC81 the status of the work and the decision regarding the future of IEC62305-5 and WG10
- This should be discussed with the entire TC 81 before action is taken.

A further comment (from me) is that the the ITU-T SG 5 reviewed the IEC 62305 documents and found them and the calculator wanting. This prompted the decision to work on their own recommendations rather than use the IEC 62305.

To target IEC 62305-5.

"h. The SPDC will establish a liaison D from SPD to TC81 Part 5" should read

"h. The SPDC will establish a liaison D with TC 81/WG 10 on IEC 62305-5 Lightning protection of services."

A&S Subcommittee Meeting Minutes

May 2, 2006

## 1. Call To Order

- a. The meeting was called to order by Doug Dorr and each member introduced their name and affiliation. There were 11 members and 2 guests in attendance.

## 2. IEEE disclaimers

- a. A&S does not need to review the patent slides at the A&S meeting according to the IEEE Program Manager.

## 3. Approval of Agenda

- a. The agenda was reviewed and it was noted that the new agenda did not match the electronic issued agenda so the new agenda was passed around the room. One additional item was added: IEEE Publication Policies. The new agenda was accepted with this addition.

## 4. Approval of minutes of last meeting

- a. Motion to accept the previous minutes were reviewed and accepted.
- b. Motion to accept the minutes from the teleconference was accepted.

## 5. Committee Reports

### a. Awards Report-Richard Odenberg

- i. At this point there are no fellow nominations. A couple of awards have been recommended but they have not been reviewed yet.

- ii. The medallion award has not been issued in several and it was mentioned that it is now harder to get a medallion award approved. Jodi Haas stated that it was intended to be harder to obtain to ensure the recipient deserved the award.
- iii. Joe-The medallion award is for members that work hard within the SPDC.
- iv. The most recent medallion award was to Bill Goldbach in 2004. The medallion award is a PES award.
  - v. The past chairman award is a PES award.
- vi. Jon Woodworth should recommend the past chair award for Richard Odenberg.
- vii. It is very important for us to get a listing of Fellows, Senior Members, Members.
- viii. Richard Odenberg will update a list of all the award categories.
  - 1. Fellow Nominations
  - 2. Distinguished Service Award
  - 3. Working Group Awards Nominations
  - 4. Past Chair Award
  - 5. Medallion Award

#### **6. Web Manager's Report – Mick Maytum**

- a. Mick reported that the IEEE-SA Grouper Web Site has been updated. The official IEEE search engine is Ultraseek. Grouper is registered with google, yahoo and ultraseek.
- b. Once the awards are determined there is already a space for the names.
- c. Working to make the groups site PES compliant (grouper only). Grouper is a PES technical committee website. We are an IEEE PES site
- d. Phase 3 is to add a member's private area. Tribute to Tom Hartman: the site craftsmanship is very good.
- e. The NIST 8-part Anthology may be added to the grouper site.
- f. We are up to 154 subscribers on grouper
- g. IEEE-SA PARs needs updating. New Chairs must resubmit their PAR forms. 3 PARs have been submitted to Jodi and they are in the IEEE data base.
- h. Mick did not put the PAR information on grouper because the information was not correct. The PAR chairs were not accurate.
- i. The WG contact list on the grouper site is correct and reviewed by Doug as accurate.
- j. Please request your group to archive the original graphics prior to submitting a standard.
- k. Mick has established an efficient method to convert bit-mapped figures to quality vector figures.
- l. Jodi noted that the original chairman has to be retained for the original par. Tony fills in is PAR update form and it goes into the PAR data base and gets updated.
- m. Group 2 is the new IEEE website which is IEEE-SA hosted. The PES has its forum within the IEEE-SA site.
- n. The working group chairs should have the best copy of the standard. Archive your standards with the original figures. The IEEE-SA is the best web hosting group that Mick has found. There are no space issues. The grouper site is much larger and much faster.

## **7. Bibliography- Carl Lindquist**

- a. Bibliography In the dictionary section the flow diagram was recreated and corrected. The dictionary itself was updated and corrected. The dictionary would be reviewed every meeting. Waiting for C62.35 and C62.42 when the documents are published the definitions will go into the dictionary Carl will be working in the 3.2 meeting with Francois who has been doing a tremendous amount of work getting the bibliographies out.
- b. Issues with figures presently using Visio but there are issues with the released versions of Visio which are not backward compatible. . One of the issues with the IEEE symbols is that they are bitmapped and uneditable, and that is why we are converting to Visio.

## **8. High Voltage Sub-Committee Report - Steve Hensley**

- a. Copies submitted and a copy will be added to this report.

## **9. Low Voltage Sub-Committee Report – Ray Hill**

- a. It was agreed that the 3.6.9 is the line side of the service entrance for secondary surge arrestors and 3.6.6 is the line side of the service entrance.
- b. James Funke let us know that he may not be able to continue as chairman of 3.6.4 due to changes a Eaton
- c. Ray Hill has a working group chairman in mind to replace James if required.

## **10. Secretaries Report**

- a. Awards Speaker – Bryan Cole
- b. Financial Update - \$4800 existing budget
- c. Future Meeting Dates - October 1-5 at the CNN Center
- d. We will put a line item for room nights.

## **11. IEC Activities – Joe Koepfinger**

## **12. Other Coordination Activities and Liaison Reports**

- a. The high voltage testing techniques committee Standard 4 is releasing a report.

## **13. Standards Coordinator Reports**

- a. **Jim Wilson HV**
  - i. 13.12 IEEE-NEMA Report complete
  - ii. C62.21 IEEE is looking at making that and interactive document
  - iii. Dave is going to correct the equation in that document
  - iv. Next date for submittals is August 4<sup>th</sup> and October 16<sup>th</sup>.
- b. Bill Goldbach
  - i. C62.31 was balloted and is being prepared for submittal
  - ii. C62.35 PAR extension expires end of 2006
  - iii. C62.42 Approved by Revcom but figures are getting updated
  - iv. C62.72 PAR submitted for ballot A 30 day ballot. 75% return and 75% approval. Did not get the 75% response rate. Ballot is now closed with comments
  - v. Additional information provided in Bill's submitted report.

#### **14. New Business**

- i. Mick suggested that the existing continuing education credits (CEC) form for be updated to include multiple lines or keep both the single line form and a multiple line form also. Mick will maintain two forms.
- ii. IEEE-SA should be a service to us and not a burden. The comment was supported by a comment that caused changes prior to ballot which was not the previous process.
- iii. The IEEE editors should work for the working groups and the working groups do not work for the editors
- iv. Doug agreed to take on the IEEE-SA issues at the Main Committee meeting.
- v. Received written comments regarding the generic minutes and they will be reviewed.

#### **15. Action Items**

- i. **Richard Odenberg will update a list of all the award categories.**
  1. **Fellow Nominations**
  2. **Distinguished Service Award**
  3. **Working Group Awards Nominations**
  4. **Past Chair Award**
  5. **Medallion Award**
- ii. **Matt & Mick will retrieve the graphic and text files from the balloted standards.**
- iii. **Web Managers Report-Mick will lose some control of the online community. Doug requested a report by the main meeting and Mick will provide it by Thursday at the main meeting**

**Meeting Adjourned**

**Spring 2006**

**HVSPD Subcommittee 3.3, 3.4 and 3.5; Steve Hensley, Chair**

**WG 3.3.11 - Continuous revision of C62.11; Mike Comber, chair**

**C62.11 *Standard for Metal Oxide Surge Arresters for Alternating Current Power Circuits***

(*>1kV*) (Revision 9/22/05) PAR (to be renewed), next publication target 2010.

C62.11-2005 has been published. Four Task Forces are currently working on Energy Capability, Weathering, Definitions and Short Circuit Testing.

**WG 3.4.8** - Protection & Insulation Coordination of Transformers; Eva Tarasiewicz, chair.

Coordinating symbols with 3.4.8 and 3.4.16, and also with C62.82.2 (IEEE 1313.2). This document is Sections 5.2 and 5.3 of C62.22. This group's work has been in support of 3.4.14.

**WG 3.4.9** - Surge Protection of AC Machines C62.21; Dave Jackson; chair

**C62.21 *Application Guide for Surge Voltage Protective Equipment on Ac Rotating Machinery***

*>1000 Volts* (2004) No PAR, Next publication target 2008

Standards Board approved 12/03. Document published 2004.

C62.21 Corrigendum 1 – Correction to Equation A.3, PAR submitted for 6/06 NESCOM.

**C62.21.1 *Recommended Practice for the Application of Surge Voltage Protective Equipment on***

***AC Rotating Machinery Rated 1 kV to 30 kV, Generators and Single-Turn Coil Motors*** (New)

PAR 03/20/05 Publication target 2009

Document is in work with the Outline at Draft 3. WG is also looking at work for a Part 2, Generator Surge Protection. This will be considered for a separate PAR in 2007 after more work has been done on Part 1 so that a scope can be drafted for Part 2.

**WG 3.4.13** - Surge Protection of Power Generating Plants; Rusty Robbins, chair

**C62.23** *Application Guide for Protection of Electric Generating Plants* 1995(R2001); IEEE

standards board reaffirmed document 12/6/01. PAR 03/20/05 until Dec 2009.

WG has a bibliography, an editable Word document, reaffirmation ballot comments, past minutes, and other draft comments with which to assign tasks and set a schedule. **This document will require an extension before it expires in 12/2006.**

**WG 3.4.14** - High Voltage Application Guide C62.22; Reigh Walling; chair transferring to Jody Levine and Tom Rozek.

**C62.22** *Guide for the Application of Metal Oxide Surge Arresters for AC Systems* (Revised

07/17/98) PAR 12/08/98 extended to 12/2005. PAR extension to 12/2006 approved 9/22/05. Next publication target 2006

Completed ballot on 3/20/05. 91% affirmative, 4 negative with comments. Resolution and redraft is underway and recirculation required before 12/2006. Reigh will not continue as chairman after resolution. Tom Rozek and Jody Levine have volunteered to co-chair this WG for the next revision cycle.

**WG 3.4.16** - Separation Effects; Tom Field; chair

**Annex C of C62.22.** This WG meets under the PAR of WG 3.4.14. Currently reviewing NEETRAC report on Model Validation. All work is for next revision.

**WG 3.4.18** - Revision/Reaffirmation of C62.82.1 (IEEE 1313.1) & C62.82.2 (1313.2): Iuda Morar; new chair (Chair Change report for both standards has been sent to NESCOM.

**C62.82.1 (1313.1) *Standard for Insulation Coordination - Definitions, Principals, and Rules***

(Revision 10/02/96 reaffirmed 06/13/02) PAR 09/12/02

Document expires 06/13/07. Planned ballot date entered in PAR is 05/01/05. This was not met. This document needs a new timeline to ballot date. If this extends beyond the expiration date, the PAR will require an extension.

**C62.82.2 (1313.2) *Guide for the Application of Insulation Coordination*** (Rev 10/27/99)

Reaffirmed 06/09/05) PAR 12/11/02. **Needs PAR Extension.**

Document expires 2010.

**WG 3.5.7** – Neutral Grounding: S. Whisenant: chair –Steve is chairing this group to decide the best course to take in rewriting.

**TF 1** – K. Stump; chair

**C62.92.1 *Guide for Application of Neutral Grounding in Electric Utility Systems (Introduction)***

(Revision 03/30/01, Reaffirmed 06/09/05) [**PAR needs to be submitted**], Expires 12/2010

This TF is reviewing comments received on reaffirmation. This document needs a PAR.

**TF 2** - S. Whisenant; chair

**C62.92.2 *Guide for Application of Neutral Grounding in Electric Utility Systems (Synchronous***

***Machines)*** (Reaff 06/09/05) [**PAR needs to be submitted**], Expires 12/2010

This document needs a PAR.

**TF 3** – D. Jackson; chair

**C62.92.3** *Guide for Application of Neutral Grounding in Electric Utility Systems (Auxiliary Systems)* (Reaff 06/09/05) [PAR 12/08/04] Expires 12/2010

Comment available for revision.

**TF 4** – L. Vogt; chair

**C62.92.4** *Guide for Application of Neutral Grounding in Electric Utility Systems (Distribution)*  
(Reaffirmation 03/21/02) [PAR 12/7/05] Expires 12/07 **needs to be extended to PAR expiration.**

This document received enough comments on ballots to guide the Task Force to areas needing revision in this document.

**TF 5** – M. Champagne; chair

**C62.92.5** *Guide for Application of Neutral Grounding in Electric Utility Systems (Transmission & Subtransmission Systems)* (Reaffirmation 12/16/01) [PAR 06/09/05] Expires 12/06 **needs to be extended to PAR expiration.**

This document received enough comments on ballots to prompt the formation of a working group to revise this document.

**TF 6** – F. Waterer; chair

**C62.92.6** *Guide for Application of Neutral Grounding in Electric Utility Systems (Distributed Generation)* New document to be written [**PAR needs to be submitted**]

Scope of equipment to be covered by this guide such as residential single phase, photovoltaic, wind, hydro, etc. It was decided that the Task Force will only address electrical power supply units rated 3 phase and 1000 Volts and below as Part 1 of this guide. Future parts may cover other devices.

<b>IEEE SPDC WG vs Project vs Expirations</b>				
<b>W.G.</b>	<b>Project</b>	Standard Expires	PAR Expires	Extensions
3.6.1	C62.31	12/2003	12/2006	
	C62.32	12/2009		
3.6.2	C62.33	12/2006		
	C62.35	12/2005	12/2005	PAR Ext
	C62.37	12/2007		
	C62.37.1	12/2005		Reaffirm

3.6.3	C62.42	12/2011		
3.6.4	C62.48	12/2010	12/2005	Complete
	C62.41.1	12/2007	12/2009	
	C62.41.2	12/2007	12/2009	
	C62.45	12/2007	12/2009	
3.6.6	C62.62	12/2005	12/2008	
	C62.72		12/2007	
3.6.7	C62.36	12/2005		Need PAR
	C62.43	12/2010		
	C62.64	12/2002	12/2006	
3.6.9	C62.34	12/2006	12/2006	
	C62.44	12/2003	12/2005	PAR Ext
3.6.10	C62.50		12/2006	
	C62.51		12/2006	

Shaded areas are standards that need attention

#### MINUTES of IEEE/SPD Working Group 3.6

**Meeting held at Sharaton Sand Key, Clearwater FL, on Thursday, 4 May 2006 at 1341.**

#### Members:

Ken Brown	Leviton
<b>Chrys Chrysanthou*</b>	<b>Telcordia Technologies</b>
Tom Conrad	LEA International
Doug Dorr	EPRI Solutions
James Funke (Secretary)	Eaton
Bill Goldbach	Danaher
Andi Haa	Consultant
Ray Hill (Chair)	Neetrac
<b>Joe Koepfinger*</b>	<b>Duquesne Light Company (consultant)</b>
Al Martin	Tyco/Raychem
Francois Martzloff	NIST
Mick Maytum	Bourns Ltd
Richard Odenberg	Transtector

Wolfgang Oertel	Bourns Ltd
Tony Surtees*	Iskra Protection USA
Don Turner*	Corning Cable Systems
Frank Waterer*	Schneider Electric
Don Worden*	Retired
Ron Hotchkiss	SSI

\* Member not in attendance

### **Interested Parties:**

Carl Lindquist	SAN-O Industries
Jodi Haasz	IEEE
Darryl Wilson	Florida Power Systems

### **Agenda**

The agenda was accepted, unopposed.

### **Minutes**

There was discussion on who should be a member of 3.6 and who should not be. The chair will have an offline discussion to determine the new membership list.

The minutes of last meeting were accepted, unopposed.

### **Chair Comments**

3.6.6 and 3.6.9 have requested a joint task force to deal with SPD disconnectors. The scope of the task force is as follows:

1. To define/characterize the coordination of an SPD's disconnectors with upstream power system OCPDs.
2. To define/characterize SPD disconnector parameters/requirements for the various locations (which includes parameters such as available fault current, surge current rating, SPD TCC, SPD disconnector TCC upstream OCPD TCC, normal overcurrent coordination study, etc.) where they may be installed and
3. To recommend whether a working group is necessary for a recommended practice (or guide maybe), if each working group (3.6.6 and 3.6.9) should take care of their own topics with the help of this task force's input or some other method of resolution.

Points of clarification:

OCPD = Overcurrent Protective Device, TCC = Time Current Characteristic, SPD = Surge Protective Device

Volunteers: (3.6.9) Dalibar Klador, Randy Goodrich, Joe Koepfinger (observer only)  
(3.6.6) Francois Martzloff, Bryan Cole, Tony Surtees, Mario Stolzenberg

### (3.6) Ron Hotchkiss (Chair), Ray Hill

- Due Date: Update at Fall 2006 (Decision Point by 3.6 to continue), Complete report at Spring 2007
- Deliverable: Written report with a summary of Part 1 and 2 and the recommendation of Part 3 reported to 3.6.

#### **Working Group 3.6.1 (Wolfgang Oertel)**

Did not meet.

All supporting documents for the revision of C62.31 are with Bill Goldbach ready for approval by the Standards committee.

#### **Working Group 3.6.2 (Mick Maytum)**

Worked through the standard procedural stuff. One out of three homework assignments were received Continued review and rework of PC62.33 (MOV test Standard)

C62.37.1 Ballot Review Group completed comment review. The CSV document to be uploaded and other WG members to be asked to agree resolutions. Many of the standards referenced have been superseded. This could be fixed by an Addendum but the extensive nature of the document makes back referencing difficult. Accordingly a PAR will be submitted for a revision to:

Review Normative and Bibliographic documents for currency and relevance (e.g. Bellcore is now Telcordia)

Correct any editorials found

Format to 2005 Style Guide.

General Review

#### **Working Group 3.6.3 (Tom Conrad)**

PC62.42 status: Approved as of December 2005 and is expected to be published this month.

Draft PAR for revision of C62.42, Guide for the Application of Component Surge-Protective Devices for Use in Low-Voltage (Equal To or Less Than 1000 V rms or 1200 V dc) Circuits, was generated on-line.

#### **Working Group 3.6.4 (James Funke)**

C62.48 Report: Bill Goldbach – will be published after IEEE editors finish review.

Reality Check Initiative: François Martzloff provided a review and update.

Chair reviewed PARs and scopes of the planned WG work on Trilogy.

Motion by Andi Haa: Revise the PAR for dot 45 to allow for revision of the document. (This will include work on the “let it rip” controversy). Vote: 12 for, no opposed.

Action Item: François Martzloff will develop a written proposal discussing the details for revising dot 45 to include the “let it rip” discussion and disseminate it in time for the full meeting.

Motion by François Martzloff: The issue of how to handle references and citations in the Trilogy shall be determined on the basis of recommendations from a task force consisting of the WG Technical Editor, SC 3.2, and François Martzloff. Seconded by Andi Haa and carried unanimously.

Scenario II TF: Tony Surtees. – briefly reviewed previous report and actions of the task force. Felt that the issue was too big for just a task force and that the whole WG should be involved. Feels the floor should be opened on this topic. Bruce Gushokov has given some information on the topic which should be addressed. Hubert Bachl (of IEC) will address the WG in the fall on the 10/350. Tony S. also presented information on IEC 81/262/FDIS IEC 62305-1.

Review/amend TF scope (by the WG Chair): Review IEC standards dealing with lightning and previously unreviewed peer reviewed papers and standards, and from these define representative test waveshapes, current levels associated with risk and probability, and for protection against the effects of direct lightning surges which are applicable for inclusion into C62.41 as part of Scenario II. Members: Dan Buchannon, François Martzloff, Ray Hill, Mario Stolzenberg., Randy Goodrich, Tony Surtees, Andi Haa.

Switching Surges: Bryan Cole (chair) – TF is reviewing papers.

Current and Voltage Driven Waveforms: Andi Haa (chair): Much time has been spend on discussions. The TF chair made a power point presentation (will provide for attachment to minutes) with discussion.

Exposure Level: Ron Hotchkiss (chair) - considering using various test levels such as the old A1, A2, A3, B1, B2, B3, C1, C2, C3 categories. The TF is interested in the WG's feelings on this suggestion (Action Item).

Endurance/Repetitive Testing: Bill Goldbach (chair) – Task is to review LS-1 material and progress. Richard Odenberg and François Martzloff volunteered to be on TF (ref. dot 45).

## **Working Group 3.6.6 (Ron Hotchkiss)**

PC 62.72 Ballot Update: Doug Dorr – 30 day ballot – initially, didn't get 75 % -- ballot was extended must have 75% return. Ballot was extended. 90% approval achieved.

Formation of the BRC for C62.72 to resolve comments as required prior to recirculation.

BRC formed: Ron Hotchkiss, Doug Dorr (Chair), Frank Waterer, James Funke, Bryan Cole, Andi Haa. Bill Goldbach noted that the ballot resolution committee member names and affiliations must be provided to Revcom.

Ken Brown provided an update on 62.62 – Ron noted that the major discussion on .62 would be held until the meeting on the 3rd. General update: At the last meeting the working group reviewed the document pretty thoroughly. Ken indicated that he is now on Draft 15 as he incorporated most all of the comments made previously. There was general discussion indicating that the document should be more of an informative document – rather than a “listing of tests” document.

The overall all test description was reviewed. Per discussions in 3.6.9 and 3.6.4 we determined to adopt a standard format that was used by 3.6.10.

Doug asked about a schedule as to when .62 may be ready for a working group pre-ballot.

Discussion was held regarding the PAR for .62. According to Bill – PAR expires 12/8/08. Doug asked about the standard life 5 year mark . Bill indicated this should not be a problem with Revcom because he is monitoring the situation.

Action Item: Bill will let Ron know if we need to do something relative to the status of the .62 document with Revcom.....

The question was asked who is on the taskforce for writing the document. It was noted that Ken Brown is the editor and the whole working group is actually writing the document. Ron indicated that that is why we have the meeting for 8 hours this time.

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Doug raised the issue that the SPDC mandate has been to try to speed up the 5 year process. There are some negative perceptions that IEEE documents take far too long to get through the process. At least try to ballot within 5 years, and faster if we can.

Action Item: It was determined that the Pre-ballot for the working group would be done at the next meeting. (October 06) Ken agreed.

Ron asked Joe D about UL – 3rd edition. Joe noted that the document was balloted successfully; comments have been resolved by the taskforce and an STP for the 24th and 25th of this month (May) to review the revisions made based on the comments. A recirculation will be done. Everything expected to be done in about 2 months. We don't expect too much of a revision.

Ken – wants to add the TOV discussion and induced failure mode test – to be further developed.

Doug discussed some of the IEEE with mandatory editorial coordination review – Bill indicated that the ballot won't start until IEEE mandatory editorial is completed – including permission letters needed.....

Francois suggested that Ken – contact Yvette Posang (IEEE) and see if she can assign an editor for the document. Then, get her the document for initial review and Ken Brown took on as action item. NOTE: On May 2 Ken met with Mike Cegallia regarding the editor.

Bill noted that even after you do the pre ballot and get with Yvette, before it is formerly balloted, the document mu st be sent to IEEE for mandatory editing.

### **TASK FORCE REPORTS:**

TF 1: PES PAPER ON SCCR UPDATE: These papers have been submitted and will be presented in Montreal Sessions. Tues June 19th. Ken Brown will be presenting the paper. Significant discussion took place regarding the payment required for submitting and presenting the papers in the PES arena. Francois reviewed the requirements for Lifetime Fellows.

It was noted that there would be Technical Session on Surge Protection on Wind Farm Installations at next PES.

Discussion took place regarding the use of the Technical Report as an avenue to publish working group documents. There was discussion regarding the use of some introductory slides for the paper presentations in Montreal. These should include:

Slides: Describe C62.72;

Why papers commissioned

Intent and what will happen to the document once published.

Grounding paper industry in the whole –

There was considerable discussion on trying to enhance the document (C62.72) with charts, graphs, pictures, calculations...

Action Item: Working group to provide equations, charts, and graphs to go into .72. The scope and objective of document is such that this material needs to be in there.

JD suggested that with regard to Lead Length impact, a simplified calculation for voltage drop should be provided so that an engineer could use it.

ACTION ITEM: Bill volunteered to pull together work on lead length – End of June time frame

Bryan to submit paper he had done –

ACTION ITEM: BRC for C62.72 will be gatherer of topic information.

ACTION ITEM: Doug will be chair of BRC and will be keeper of list of items to expand upon in 62.72. As action item for working group, if you have items that should be on that list, send to Doug and copy Andi and Ron for tracking. Doug will be the gatherer of the documents – send to Doug, Andi and Ron

The process of submitting papers was discussed and the activity encouraged. These papers should be reviewed by working group. The process would be that the working group identify paper topics, create a taskforce to write the papers and then once reviewed, the papers should be submitted to 3.6 and reviewed by ANS.

TF2: GROUNDING TASKFORCE REPORT – Scope of Taskforce -- To review information on grounding – theoretical and practical – two papers to be completed. Francois and Tony did one on theoretical. This has been completed and is the paper that will be presented in Montreal.

The paper on the practical – is still in process. Bill Bush and Chuck Jensen discussed grounding related to direct applications for utilities. It was determined that the focus of the Grounding taskforce now would relate to ground metering equipment.

Grounding Taskforce Participants: -- now, Chuck, Bill, Bryan (Chair) – Ray Hill added to the taskforce – Focus to be on the Reality check on the validity of grounding instrumentation for high frequency impedance testing. This will also address the question as to what is a good ground for SPDs.

Original Scope of the paper discussed as being – To write a paper on the technical aspects of a North American grounding and bonding system as they pertain to the protection of electrical or electronic equipment in a lightning environment. It was determined that the taskforce would continue with this scope for now, as well as work on another document related to ground measurement equipment. Bryan will revisit the outline – and group will tweak as required.

The ground metering process was discussed and concerns were raised with regard to traditional meters used to determine suitability of ground. These don't necessarily relate to the SPD performance.

The focus of the new paper will be: Impact of high frequency meters – higher numbers not well received – maybe one of our charters is to re-educate based on the high frequency issues –

TF3: MCOV and MOVs Coordination Taskforce -- Ron reported that he is lacking current transformers to run test – Pearson model transformer – He is working on getting some additional transformers. The concept of the test and the resultant paper revolves around taking 150 and 130 volt MOVs, separating them by a specified length of wire – measure 1st MOV and 2nd MOV then determine the amount of current sharing that goes on.

Francois indicated that the High Low vs. Low High – an IS paper – by Francois – did this – SPD anthology -- Part 8 – This will be reviewed as well. Two concerns were noted – looking at coordination of gapped typed silicon carbide. Looking at MOV.

A discussion was held regarding modern voltage switching and voltage limiting devices -- may be appropriate for service entrance to use a bonding device – technically, voltage limiting device 21st century device seems to be more effective than an all MOV coordination system. Review of the role and stress of SPDs is required. This will show that if you have an MOV at the service entrance then 30 meters downstream, also involved in the exit path.

C62.41.2 discusses this as well and will be reviewed. Stress of all devices in the exit of the lightning current to the outside was discussed.

TF4: Task Force on SPD Disconnecter Coordination:

Scope: coordination paper – recommend a joint working group activity regarding the disconnecter as related Recommend a joint taskforce in 3.6 and let them look at ground rules – Dalibar interested in this topic check with 3.6 and touch base with Dalibar – Ron

Ray and Ron to get together – Ray to finalize scope to review with 3.6.9 and then 3.6. Consider:

SPD Element

Built In SPD Disconnecter

Upstream Disconnector – now look at SPD as a fuse –

Then the system OCPD

Coordination between disconnecting in safe manner and the disconnecter itself.

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The Volunteers for joint Task Force are: Francois – Tony, Bryan, Mario, and Ray

Action Item: Ron and Ray to present joint taskforce to 3.6

It was determined that the name of the Grounding task force would be changed to Grounding and Bonding.

TF 5: Task Force on Loss of Neutral: Taskforce will continue: Ron will move it forward as chair. One of the issues here is a lot of concern with regard to voltages used during failure tests – concerned that if we do away with the twice voltage usage all together – some instances where that can still happen. E.g. loss of neutral and misapplication. Ken noted that there is a place holder for it now.

May not need this taskforce based on the work of 3rd edition. Language will be reviewed further after UL STP meeting.

Andi – provided back ground for the Let It Rip discussion and provided a presentation discussing the two schools of thought on the subject. After the presentation and discussion, the Working Group reached consensus on the following:

Both Current Driven and Voltage Driven tests are appropriate for more complete characterization of the SPD and the environment.

The term Measured Limiting Voltage should not be specific to one test or the other; the test parameters must be described in the test and in the documentation. Measured Limiting Voltage is a recording of the result achieved.

Action Item: Ken Brown to change scope of .62 and ensure that scope and par match.

Bryan presented an Overshoot definition. Bryan: A condition whereas the resultant voltage exceeds the final value as a result of parasitic components included either in the SPD or within the measurement devices. After much discussion, it was determined that we would use IEEE 100 definition for oscilloscope overshoot.

Doug reviewed the mandate from IEEE: Defined terms that are needed to be in the document for ease of reading, must go in Informative Annex -- Glossary –

All documents must be formatted in accordance with the style guide.

The rest of the meeting consisted of the review of C62.62 Draft 15. Ken noted items for change and or addition.

It was noted that all test portions of the document would be formatted as discussed in 3.6.4 and 3.6.9, using the basic template provided in the document from 3.6.10.

Action Item: Ken will review annexes as they exist now and see if they should be included in the new document

Action Item: Ken has action item to review .62 2000 version – for appropriateness of tests (discussion revolves around inclusion of user-defined tests and other tests being included in the document)

Action Item: WG has action to review and provide any tests that you feel would be appropriate in the document for comparison of products or other appropriate tests.

Significant discussion revolved around the definition of two port. It was voted 9 to 2 to adopt the definition of two port from UL 1449 3rd edition.

Action Item: Andi to take definition of two- port to 3.2.

Several new action items documented on Action Item List attached.

## **Working Group 3.6.7 (Al Martin)**

Receipt of contributions

WG3.6.7-06-05-001 [Al Martin – Unapproved minutes from 05-10 Atlanta]

WG3.6.7-06-05-002R2 [Al Martin – Agenda]

WG3.6.7-06-05-003 [Al Martin – C62.36 ballot]

WG3.6.7-06-05-004R1 [Al Martin – Updated test matrix]

WG3.6.7-06-05-005 [Bogey Klabossa – Updated test matrix]

WG3.6.7-06-05-006 [Bogey Klabossa – Alarm circuit protector-1]

WG3.6.7-06-05-007 [Bogey Klabossa – Alarm circuit protector-2]

WG3.6.7-06-05-008 [Alan Rebeck – Alarm circuit protector]

WG3.6.7-06-05-011L [Chrys Chrysanthou – Draft 4 of C62.64]

WG3.6.7-06-05-012L [Mario Stolzenberg- updated test matrix]

Review and approval of the notes from the last meeting (WG3.6.7-05-10-001)

The notes from the last meeting in Atlanta, Georgia were approved as read

Review of homework assignments from last meeting

Bogey Klabossa:

Revise contribution. Redefine frequency range, add values [done]

Al Martin:

Contact Fultek for numbers for fast current limiters [done]

Add values for PTC [done]

Update the Test Matrix [done]

Add secondary protectors [done]

Renumber the test references [done]

Meet with BRC to resolve any comments on C62.36 reaffirmation [done]

Alan Rebeck:

Take the phase shift test from C62.36 [clause 7.8] and add it to C62.64 as subclause 5.2.3.7 [not done]

Mario Stolzenberg:

Revise contribution to use Test Matrix format. Describe type E – Industrial applications and Type G – Ethernet and unbalanced applications. Put values in the relevant test columns. [done]

Don Turner:

Add values to Test Matrix for Type F Alarm Circuits [done]

Chrys Chrysanthou:

Update Draft 3 to include this meeting's activity. [done]

As appropriate add notes in subclauses explaining [done]

Multiple values

The application

Footnotes explaining that values in the table are from the XYZ standard

In Matrix, add values for Types A20 – A30 Insertion Loss, Return Loss, Longitudinal Balance, Bit Error Rate [not done]

Everyone:

Review subclauses in clauses 4 and 5: Accept, modify, delete

Chair's Remarks

10 out of a possible 16 members were present, so a quorum existed.

Vice Chairman/Secretary:

Greg Triplett has agreed to be the Chairman/Secretary:

Status of C62.43, "Draft Guide for the Application of Surge Protectors Used in Low-Voltage (Equal to or Less than 1000 Vrms or 1200 Vdc) Data, Communications, and Signaling Circuits"

Published

Standards up for 5-year review

C62.36, IEEE Standard Test Methods for Surge Protectors Used in Low-Voltage Data, Communications, and Signaling Circuits, was due to expire 12/2005

Voted to reaffirm

Ballot comments: WG3.6.7-06-05-003

Submitted C62.36-2000 for 20-day reaffirmation ballot

Recirculated: No comments, 97% approval

Approved by Revcom 3/30/06

Contribution Cover Page (WG3.6.7-05-10-004)

The Chairman noted that the cover page for contributions has been updated to include legal notices

Continue the revision of C62.64

PAR

This standard is to be revised to include new technology and devices. It will

Provide preferred values and parameters used to specify the performance of these surge protectors.

Be coordinated with its companion document C62.36.

Relevant contributions:

WG3.6.7-06-05-004R1 [Al Martin – Updated test matrix]

WG3.6.7-06-05-005 [Bogey Klabossa – Updated test matrix]

WG3.6.7-06-05-006 [Bogey Klabossa – Alarm circuit protector-1]

WG3.6.7-06-05-007 [Bogey Klabossa – Alarm circuit protector-2]

WG3.6.7-06-05-008 [Alan Rebeck – Alarm circuit protector]

WG3.6.7-06-05-011L [Chrys Chrysanthou – Draft 4 of C62.64]

WG3.6.7-06-05-012L [Mario Stolzenberg- updated test matrix]

Discussion of the matrix

Bogey Klabossa's contribution WG3.6.7-06-05-005 covering application type D was accepted.

The column headings for 5.2.1.7 Impulse life and 5.2.2.8 Impulse life appear to be the same, but the test parameters are different.

Clarification: 5.2.1.7 is meant to cover voltage-limiting devices, 5.2.2.8 is meant to cover current-limiting devices. The test in 5.2.2.8 is done either with the voltage-limiting device removed, or with a voltage below the threshold of activation of the voltage-limiting device.

Matrix elements for Alarm Circuits were discussed. Contributions WG3.6.7-06-05-006, WG3.6.7-06-05-007, and WG3.6.7-06-05-008 were all data sheets – apparently submitted with the idea that the WG would extract values from these to put in the matrix. The WG was unable to do so, because it was not clear how the numbers on the data sheets related to the matrix elements. The net result is that we still need matrix element values for Alarm Circuits.

Mario Stolzenberg's WG3.6.7-06-05-012L contribution on Industrial Applications was discussed, and generally accepted. Line 28 was added to the matrix for RS232 data communication systems, to show a preferred voltage of 24 volts. The other data communication systems have a preferred voltage of 14 volts.

The question was raised as to whether the bit error rate [Column 5.2.3.5, bit error rate] was appropriate characterization for surge protectors. The idea behind measuring the bit error rate of a protector is to confirm that it has no effect on the system. C62.36-2006 defines the BER criteria as being the % difference between the BER with the protector installed, and the BER with the protector removed. A BER of 10<sup>-7</sup> was suggested, but that needs to be converted to the criteria of C62.36-2006. We need values.

The numbers in the matrix have been provided for the example listed in the "Examples of services provided" column, and thus in the case of application types A11, A21, A40, H11, H21, and H40 apply only to 4 ohm heat coils. These numbers do not apply to fuses, which are widely used. The question of what to do about this situation was debated.

Should the matrix be expanded to types A11a, A11b, A21a, and A21b, where the "a" would designate heat coils, and the "b" would designate fuses? If this approach is taken, then the matrix may need to be greatly expanded to include all relevant technologies for all application types. Do we want to do that? Do we have a problem if we miss some technologies?

Should the matrix could be left as it is, and ranges of numbers covering all relevant technologies entered as matrix elements? If that is done, would the result possible be confusing, and too broad to be useful?

An inductance of < 1 μH was suggested for applications A11, A21, A40, H11, H21 and H40. This value corresponds to the inductance of a heat coil often used in these applications.

A proposal to eliminate columns for 5.2.2.4 [current reset], 5.2.2.5 [trip endurance], and 5.2.2.6 [blocking cycle life] was rejected.

The WG felt that numbers for these quantities would be useful.

Industrial bus systems and ethernet could exit a building, and so the matrix elements for these systems should take that fact into account.

Adding the Matrix as an informative annex to Draft 4 was discussed. The WG decided not to do it, because the large size of the matrix would likely preclude its being printed out in a paper copy of C62.64. Instead it was suggested to post the Matrix on the WG3.6.7 web page, and add a link to it on the Grouper site.

For the Matrix as revised at this meeting, the new values are highlighted in yellow

New Business

It was pointed out that C62.64 is really becoming a guide, rather than a standard. Should the PAR be changed to create a guide rather than a standard? This question will be discussed at the next meeting.

Action Items

Bogey Klobassa:

Contribution supplying values for the Alarm Circuit matrix elements

Al Martin:

Contribution supplying polymeric PTC values for matrix columns 5.2.2.1 – 5.2.2.9

Send e-mail to Bogey Klobassa and Alan Rebeck asking for a contribution on alarm circuits.

Send the meeting markup of Draft 4 to Chrys

Alan Rebeck:

Contribution taking the phase shift test from C62.36 [clause 7.8] and adding it to C62.64 as subclause 5.2.3.7.

Contribution supplying values for the Alarm Circuit matrix elements

Carl Lindquist and Bill Travis:

Submit contribution commenting on the following:

Review Table 10. Is it appropriate to have one table for 3 sections? How should it be laid out?

Regarding the discussion in 12.3, consider whether the matrix should be expanded to include technology types as a subset of application types. For example, types A11a, A11b, A21a, and A21b, where the "a" would designate heat coils, and the "b" would designate fuses. Alternatively, should a range of values encompassing all technologies should be entered as matrix elements? Any other ideas?

Brian Price:

Contribution Supplying values for ceramic PTC for matrix columns 5.2.2.1 – 5.2.2.9

Phillip Havens:

Contribution supplying matrix elements for Type G Ethernet.

Chrys Chrysanthou:

Update Draft 4 to include this meeting's activity [Al to supply meeting markup of Draft 4].

In Matrix, add values for Types A20 – A30 Insertion Loss, Return Loss, Longitudinal Balance, Bit Error Rate

Global replacement of C62.36-2000 to C62.36-2006

Everyone

We need a contribution on the % difference between the BER with the protector installed, and the BER with the protector removed.

## **Working Group 3.6.9 (Ray Hill)**

C62.34 Par and Scope Review -- Review Par –

Joe Koepfinger recommended that we ask for a reaffirmation and par revision and extension. It was noted that when we do this, we must make sure the Par, Title and Scope are all consistent prior submission to NESCOM

Dave J. to chair Definition Task Force – Members include: Francois M. , Andi H., Joe D., and Bill G.

TASK FORCE REPORTS:

TF 1: TOV WITHSTAND: Ken Brown, Chair

We have the latest document that was worked on at the taskforce. Ken B. reviewed the TF's work. Ken B., Chuck J., Frank W., Steve W., Joe D., George Mayle, Bill G.

TF 2: FAULT CURRENT WITHSTAND: Ron Hotchkiss, Chair  
Ron H. reviewed the Fault Current Withstand/SCCR work.

Determined that the goal was to harmonize with the UL standard – 3rd edition.

It was further noted and reinforced by both Ray H. and Ron H. that the scope of 3.6.9 is Line side terminals for main OCPD (.34). 3.6.6 takes over the at the load side of the OCPD (.62).

Discussions were held on the Over Current Protective Device (OCPD).

Fault current rating vs. SCCR Discussion: Concern as to whether 3 cycles for thru current would be acceptable. Consensus that what ever the meter socket requires – will be suitable. Verification with UL 414 necessary.

SCCR: Intent to have this harmonize with the UL procedure. Basically every secondary arrester will have a rating.

Short Circuit Rating

Interrupting Rating

Breaking Rating

Francois M. discussed the template in WG 3.6.10: Document C62.50.

For Test Sections, each item below is required:

Rationale for the Test

Purpose of Test

Test Procedure

Test Equipment

Evaluation of Results

Consensus was reached to use this format for all test sections and to suggest this to all the working groups.

Joe Koepfinger raised the issue of distributed generation systems, photovoltaic cells, micro grids that don't have what we would currently call a main overcurrent disconnecter. Joe suggested that we need to double check as to how we use the term OCPD and requirements under the code.

TF 3 Report: Taskforce 3 on Surge Environment: Bryan Cole presented Section 6 which will eventually be inserted into .34

Discussion for BRC on C62.44 document. The following broad scope items were discussed and decisions noted:

There is a need to review and revise the Par and Scope of this document. Our focus as 3.6.9 is on the line side of the main OCPD.

The Par and Scope of the document reflect going to the load side. It was determined by consensus that Ray H. would review with IEEE what needs to be done to get this changed. This was a large issue for one of the balloters who voted negative. It was determined that resolution of this matter would result in a change from negative to positive.

NOTE: Subsequent to the meeting a par and scope modification was performed.

One port vs. Two port SPD definition – it was determined to use the IEC definition.

Purpose of the secondary arrester – protection of equipment or protection of building wiring and insulation – It was determined that it could include all of the above.

The chair noted that with this information and one more BRC meeting, all items should be resolved. The goal is to have a recirculation document prepared by August.

New Joint Task Force Discussion: SPD Disconnectors

If approved by 3.6, then a joint taskforce would be a 3.6 taskforce with responsibility to report findings to 3.6.6 and 3.6.9.

Dalibor K. – TCC (Time Current Curve) coordination should be included in taskforce review – consider arc flash.

It was approved unanimously that 3.6.9 would join 3.6.6 in making a recommendation to 3.6 that a joint taskforce on SPD disconnector coordination be formed. The possible scope (with modification anticipated after 3.6.6) is shown below:

Scope to include :

To define/characterize the coordination of an SPD's disconnectors with upstream power system OCPDs.

To define/characterize SPD disconnector parameters/requirements for the various locations (which includes parameters such as available fault current, surge current rating, SPD TCC, SPD disconnector TCC upstream OCPD TCC, normal overcurrent coordination study, etc.) where they may be installed and

To recommend whether a working group is necessary for a recommended practice (or guide maybe), if each working group (3.6.6 and 3.6.9) should take care of their own topics with the help of this task force's input or some other method of resolution.

members recommended for Task Force: Ron Hotchkiss, Dalibor Kladar, Randy Goodrich – Joe K to be observer –

Chair's Note: After the SPDC meetings Randy Goodrich asked to have Corey Leavitt replace him on this TF. With Corey's okay and the TF Chair's (Ron Hotchkiss) permission, this change was made. The Chair of 3.6 okayed the change, also.

## **Working Group 3.6.10 (Tony Surtees)**

Tony Surtees brought to the group a patent issue. There is some concern that the group might be affected by an existing patent. The patent was displayed. Tony reviewed the content of the patent. Tony discussed the process of gaining permission from the patent holder to use this information or determine if they have any concerns with the IEEE using information contained in the patent. Tony has sent multiple letters to the patent holder following the process outlined by IEEE. Tony is looking to gain a letter of assurance from the patent holder. Two communications have been sent by Tony to the company via email with no response. Discussion followed regarding the patent and the process.

Bill Goldbach will bring this issue up in his meeting with the IEEE to verify what is required. Tony Surtees agreed to write a letter to be sent by registered mail so that a return receipt will be recorded. Action Item: Tony Surtees will send a letter to the patent holder to document this process. Tony Surtees and Bill Goldbach will work with the IEEE to resolve this issue.

The minutes from the previous meeting were displayed, reviewed and approved by the working group.

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The membership was reviewed by the Chair and Secretary and Bill Curry and Ernie Gallo were removed from the membership list due to lack of meeting attendance. Other members that have not been attending lately will be queried to see if they are still interested in membership.

7. The chair reviewed the PAR and asked Bill Goldbach if the PAR had been updated at this time. Bill stated that the PAR had not been updated as of the meeting. Bill Goldbach took the action item to update the PAR.

Action Item: Bill Goldbach took the action item of updating the PAR with the wording of the title, scope and purpose that Tony Surtees had presented to him at the previous meeting.

Old Business

A review of the action items and updates to the action items are recorded below.

· The Secretary is to email each of the task force leaders a list of the task force members and their email addresses.

This item was completed.

Francois Martzloff accepted the action of wording the procedures associated with the work of TF#5 and then to ask for feedback from the task force members.

Francois reported that this action has been depended on the progress of the UL 1449

Third Edition effort. The work on UL 1449 should be completed soon (reference UL meeting at the end of May 2006), at that time the procedures need for this work will be available. This TF will continue its work.

Task force #6 is to continue with their work and provide a report prior to the next meeting.

Chrys Chrysanthou was not present at the meeting. Mick Maytum will fill in with this report.

Task force #7 is to continue with their work and provide a report prior to the next meeting.

Mick Maytum will provide an update of the TF work during the TF report.

All task forces are to post a report to the online community not less than 2 weeks prior to the next meeting for all members to review and assimilate.

A review of the online community was completed and no reports were found.

Task Forces are requested to use the latest draft of the document from the OC, and to clearly mark changes or additions they have under their sections to assist the Editor in his task of maintaining the Master draft of this document.

James Funke has distributed the draft of the standard and posted the current draft (9) to the online community during the meeting.

The Chair will request membership for Mick Maytum in WG 3.6.10 from the 3.6 chair with endorsement.

Tony will complete this action at the 3.6 meeting on May 4, 2006.

Editor's Report

James Funke provided the editor's report. James indicated that he will be able to serve as editor at least to the next meeting but not necessarily after that. Mick Maytum asked what version of the IEEE

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template was used in generating the current draft of the standard. James reported that he had used the 2003 version. Mick reported that an updated template is available on the online community in the 3.0 area. Mick suggested that the new editor should take on this action since it appears will not be the long term editor and this new template will require instruction.

TF Reports

Chuck Jensen provided a report for Task Force #4 (Changes for C62.51). Chuck is generating a list of issues that will need to be addressed by this group when the work of the other TF groups is complete. Chuck mentioned that William Bush was now part of his group.

Francois Martzloff provided a report for Task Force #5 (Power Port). Francois reiterated the concept of waiting for UL to finish their work as it will directly affect the procedures in Section 5. This same work is being done in WG 3.6.6 under the 62.62 document. Discussion followed from the working group. The work of the TF will continue. Francois will note any procedures in addition that are not included the work of UL and 62.62 that are needed for this document.

Mick Maytum provided a report on Task Force #6 (Communications Port). He indicated that progress had been made in this area and detailed generally these areas. Mick indicated that if Chrys Chrysanthou was present at the meeting that he could provide more detail on these areas as Telcordia is currently working on expanding their standards. The expansion of the test procedures for the items

mentioned includes the antenna port, multi-twisted pair UTP, and power over Ethernet. The work of this TF will continue.

Mick Maytum provided a report on Task Force #7 (Interaction/Equalization). He indicated that not much progress had been made in this area since the last meeting. Mick reported that the area of power over Ethernet has grown since the last meeting and its implementation. We might have to reconsider how we are addressing this issue in the work of this TF. The work of this TF will continue.

The working group broke out into the TF groups and will report back after a two hour time period.

The working group will discuss the progress of the TF.

The working group reconvened and provided updates from the work completed:

Task Force #5 (Power Port):

Chuck Jensen provided a report for TF#5. The group reviewed the existing information in Draft 9.

The group characterized the test that will be covered in UL 1449 and listed additional tests that would be required. For Type 3 devices, the group felt that the VPL and induced failure tests from the UL and 3.6.6 effort would be adequate. The group would like to include a TOV withstand test, In (functional), and possibly an I<sub>max</sub> test (could fail acceptably). The audience of the document was stated as being the manufacturer of the device and those who might recommend this device.

Action items for the Task Force #5 (Power Port):

Review the "post-UL 1449 STP meeting" documents to see how those decisions impact the efforts of the TF and how those coordinate with the efforts of 3.6.10 and 3.6.6/3.6.9.

Review the TOV test from 3.6.6 and 3.6.9.

Develop the In and I<sub>max</sub> test within this document.

Review the existing section of the document (mostly editorial).

As a result of the discussion regarding this task force, Matthew Ceglia agreed to see if it would be acceptable from the IEEE's standpoint whether or not a manufacturer could claim compliance with this standard.

Task Force #6 (Communications Port) and Task Force #7 (Interaction/Equalization):

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Mick Maytum reported that these task forces worked together during the meeting. Mick reviewed the previous list of action items. The items that have been completed have been removed from the list. The other items are still going forward or have been modified/expanded. Mick agreed to distribute the updated action item list to the task force members.

Mick provided a tutorial on power over Ethernet and other systems that will be covered by TF#6 and TF#7.

Action items for the Task Force #5 (Power Port):

Mick Maytum will distribute an updated to the list of the action items that were discussed amongst the task force.

Francois Martzloff brought to the table a discussion that he has not heard that any reference to surge or ground reference equalization of the multiple ports. Mick Maytum indicated that this concept is inherent to the testing procedure that is in the document. Mick offered to reference other documents that might be directly related to this issue. This will be considered as all groups move forward.

New Business

Doug Dorr had reported to Tony Surtees that WG 3.6.10 might need to liaison with the working group that submitted a PAR for a document titled "Guide for the Protection of Communication Installations from Lightning Effects". Tony asked the group if they felt that this would be an area where we need to coordinate with this group. William Bush took an action item to ask Percy Pool (WG Chair for this document) if they feel this is necessary. The working group felt that there would not be a need for this action.

Action item: William Bush took an action item to ask Percy Pool (WG Chair for this document) if they feel this is necessary.

18. The next meeting was announced.

19. The meeting was adjourned at 11:48 am.

Action Items from May 4, 2006 Meeting (Working Group):

Tony Surtees will send a certified letter to the patent holder to document this process. Tony

Surtees and Bill Goldbach will work with the IEEE to resolve this issue.

Bill Goldbach took the action item of updating the PAR with the wording of the title, scope and purpose that Tony Surtees had presented to him at the previous meeting.

Matthew Ceglia agreed to see if it would be acceptable from the IEEE's standpoint whether or not a manufacturer could claim compliance with this standard. He will report this back to the working group via the chair.

William Bush took an action item to ask Percy Pool (WG Chair for this document) if they feel this is necessary.

Action Items reported by the Task Force leaders:

Task Force #4 (Changes for C62.51): No action reported at this time.

Task Force #5 (Power Port) Breakout session report:

Participants: Francois Martzloff (Leader), Chuck Jensen, Randy Goodrich, William Bush, Ken Brown, Ron Hotchkiss, Corey Leavitt, and Tony Surtees

· Reviewed Existing Section 5 of PC62.50 Draft 9

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· Discuss applicable tests from proposed UL 1449 3rd edition and other standards for Power Port Tests.

· Proposed Test to Include from UL 1449:

Test to determine Voltage Protection Level (VPL)

Intermediate Current and Limited Current Tests

· Additional Test:

TOV Withstand Test from WG 3.6.6 PC62.62

In Test (Remain functional)

Imax Test (Allowed to fail meeting appropriate criteria)

· Action Items for Task Group:

Review Existing Sections 5.1 & 5.2 of PC62.50 Draft 9

Review UL 1149 3rd Ed (Post May 2006 STP Mtg)

Review TOV Withstand Test from PC62.62

§ Ken Brown to provide Task Group most recent version.

Develop Test Protocol for In & Imax Tests

Task Force #5 (Power Port):

Review the "post-UL 1449 STP meeting" documents to see how those decisions impact the efforts of the TF and how those coordinate with the efforts of 3.6.10 and 3.6.6/3.6.9.

Review the TOV test from 3.6.6 and 3.6.9 (Ken Brown).

Develop the In and Imax test protocol for inclusion in this document.

Review the existing section of the document (mostly editorial).

As a result of the discussion regarding this task force, Matthew Ceglia agreed to see if it would be acceptable from the IEEE's standpoint whether or not a manufacturer could claim compliance with this standard.

Task Force #6 (Communications Port) and Task Force #7 (Interaction/Equalization): 1.

Mick Maytum will distribute an updated to the list of the action items that were discussed amongst the task force.

## **Old Business**

Hubert Bachal will be available at the fall meeting. He will discuss the 10/350 us waveform as used by IEC. The presentation will be done on Tuesday (4-8 hours). Francois Martzloff will be presenting from an IEEE prospective, members are invited to provided input to this presentation.

## **New Business**

Discussed professional development hours.

How can we assist SPDC to have more Senior Grade Memberships

Titles and Descriptions for Working Groups should be reviewed and updated with Mick as needed. Please review.

Need more topics for luncheon meeting.

## **Next Meeting**

Thursday Oct 5<sup>th</sup> at the OMNI Hotel in Atlanta GA.

## **Adjournment**

Meeting was adjourned at 1450.

## ***SC 3.6 Working Group Requests for Spring 2006 Meeting***

WG 3.6.1 Wolfgang Oertel  
No meeting scheduled

WG 3.6.2 Mick Maytum  
6 hours  
projector, screen, and hub  
no conflicts with:  
3.6.1  
3.6.3  
3.6.7  
3.6.10  
3.1  
3.2  
3.7

WG 3.6.3 Tom Conrad  
4 hours  
projector, screen, and hub  
no conflicts with:  
3.6.1  
3.6.2  
3.6.6  
3.6.7  
3.7

WG 3.6.4 James Funke  
8 hours  
projector, screen, and hub  
no conflicts with:  
3.6.6  
3.6.9  
3.6.10  
3.3.11  
3.4.8  
3.4.16  
3.2

WG 3.6.6 Ron Hotchkiss  
4 hours  
projector and screen  
no conflicts with:  
3.2  
3.6.4  
3.6.9  
3.6.10

WG 3.6.7 Al Martin

8 hours

projector and screen and hub

no conflicts with:

3.1

3.6.2

3.6.3

3.6.10

WG 3.6.9 Ray Hill

4 hours

projector and screen

no conflicts with:

3.6.4

3.6.6

3.3.11

3.4.16

3.4.8

3.6

3.2

WG 3.6.10 Tony Surtees

4 hours

projector and screen

no conflict with:

3.6.1

3.6.2

3.6.3

3.6.4

3.6.6

3.6.7

3.6.9